

Amendment under 37 CFR §1.111  
Application No. 10/506,537  
Attorney Docket No. 042541

**AMENDMENTS TO THE CLAIMS**

This listing of claims replaces all prior versions of claims in the application.

1. (Currently amended) A heat-resistant Ni-alloy composite having excellent high-temperature oxidation resistance, comprising:

a Ni-alloy substrate and

a multi-layer surface structure formed on the Ni-alloy substrate, ~~the multi-layer surface structure being formed by Al diffusing treatment of the Ni-alloy substrate containing Cr, or by Al diffusing treatment of the Ni alloy substrate coated with a Cr-containing layer,~~ comprising

an inner Cr layer with Cr content of about 85 atomic percent to about 95 atomic percent in the form of  $\alpha$ -Cr phase composed of precipitates between the substrate and an outer layer and

the outer layer composed of a  $\beta$  phase (Ni-Al-Cr) and a  $\gamma'$  phase ( $\text{Ni}_3\text{Al}(\text{Cr})$ ), wherein the Al content in the outer layer is homogeneous and is at least 20 atomic percent, and the Cr content in the outer layer is saturated,

wherein said multi-layer surface structure is formed by diffusing Al in a  $\text{NiAl}_3$  (+ $\text{Ni}_2\text{Al}_3$ ) layer formed on the Ni-alloy substrate containing Cr.

2-4. (Cancelled).

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5. (Original) The heat-resistant Ni-alloy composite according to claim 1, wherein the Ni-alloy substrate comprises a heat-resistant Ni-based alloy or a Ni-based superalloy.

6. (Original) The heat-resistant Ni-alloy composite according to claim 1, wherein the Ni-alloy substrate comprises a Ni-Cr-based alloy having a Cr content of at least 20 atomic percent.

7. (New) A heat-resistant Ni-alloy composite having excellent high-temperature oxidation resistance, comprising:

a Ni-alloy substrate and

a multi-layer surface structure formed on the Ni-alloy substrate, comprising

an inner Cr layer with Cr content of about 85 atomic percent to about 95 atomic percent in the form of  $\alpha$ -Cr phase composed of precipitates between the substrate and an outer layer and

the outer layer composed of a  $\beta$  phase (Ni-Al-Cr) and a  $\gamma'$  phase ( $\text{Ni}_3\text{Al}(\text{Cr})$ ), wherein the Al content in the outer layer is homogeneous and is at least 20 atomic percent, and the Cr content in the outer layer is saturated,

wherein said multi-layer surface structure is formed by diffusing Al in a  $\text{NiAl}_3$  ( $+\text{Ni}_2\text{Al}_3$ ) layer formed on a Cr-containing layer coated on the Ni alloy substrate.

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8. (New) The heat-resistant Ni-alloy composite according to claim 7, wherein the Cr-containing layer is a Ni-Cr-based alloy layer.

9. (New) The heat-resistant Ni-alloy composite according to claim 7 and 8, wherein the Cr-containing layer has a Cr content of at least 20 atomic percent.